

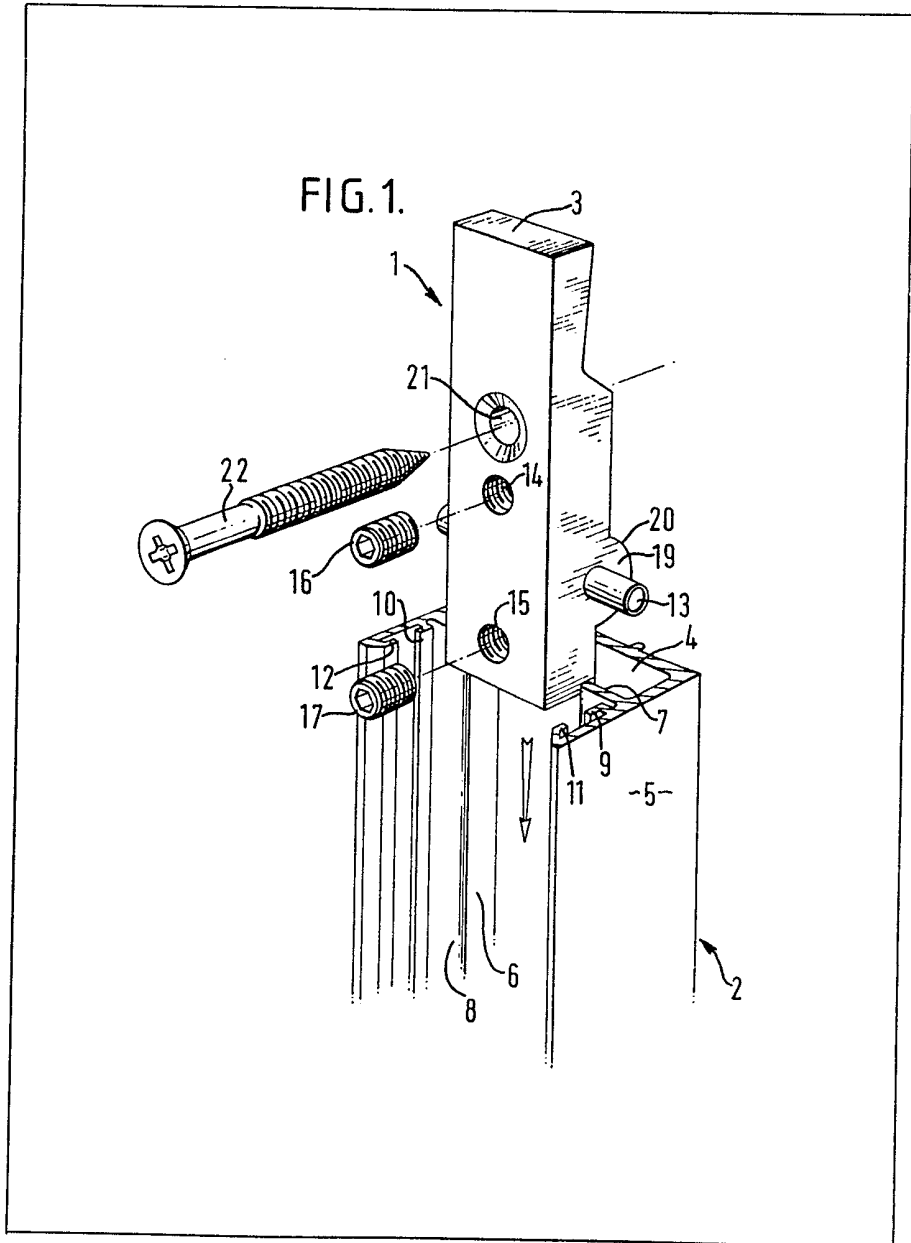
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(54) Adjustable striker for locks

(57) The striker comprises a strike block 1 having a stepped abutment 3 for engagement by the hook end of a bolt. The strike block 1 is mounted in a channel-shaped support 2 which may form the fixed frame providing forwardly extending side walls between which the door or window is received when closed. The strike block 1 has lateral extensions formed by a pin 13 which engage behind opposed flanges 7, 8, and concentric with the

pin 13 the rear of the block has a curved support face 20 which engages the base of the channel so that the block is slidable lengthwise of the channel. Two adjusting grub screws 16, 17 disposed above and below the axis of the pin 13 and face 20 engage the base of the channel to permit tilting adjustment of the strike block to vary the attitude of the abutment 3 after the strike block is in the correct vertical position. A screw 22 may secure the block in the adjusted position.



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FIG. 1.

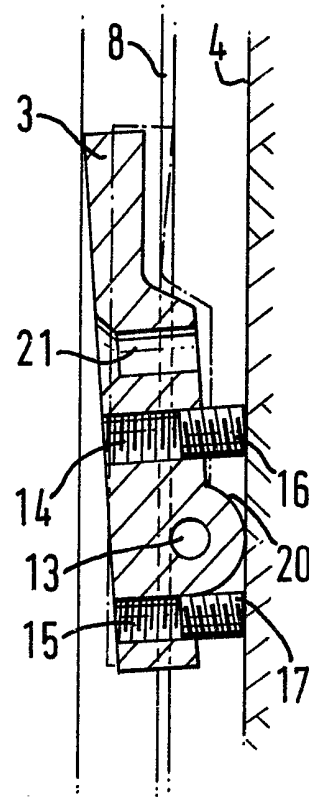
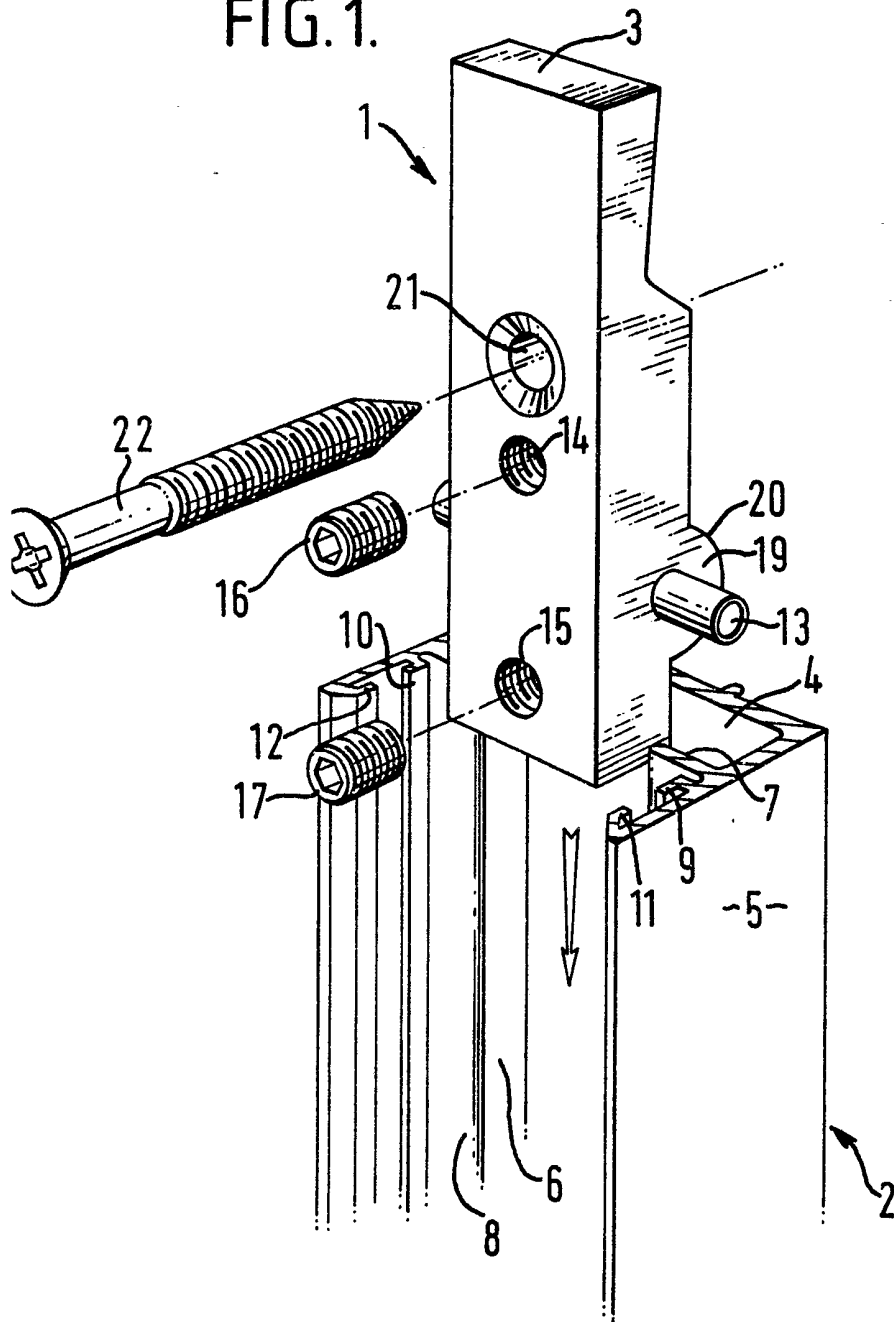


FIG. 2.

SPECIFICATION

Improvements in strikers for locks

This invention concerns improvements in strikers for locks, and is particularly concerned

5 with the type of lock having a bolt with a claw or hook end which is arranged to be engaged with a striker, the bolt being displaceable about a pivot within the mechanism of the lock so as to be moved relative to the position of the striker
10 between a bolting position and a released position. In the bolting position, the claw or hook end of the bolt is engaged with an abutment face of the striker. The bolt may be pivoted upwards or downwards into the bolting position.

15 Conventionally, such type of locks, hereinafter called "Hook Bolts", are made to a wide range of specifications and have special application in securing sliding doors or windows. For instance, Hook Bolts are used with metal framed glazed
20 doors used for porches, screens or other sets of external doors commonly called patio doors.

This invention has particular application for Hook Bolts for use with sliding doors or windows having a metal frame, normally made of
25 aluminium extrusions, with the sliding door or window mounting the Hook Bolt for engagement with a striker set on a jamb. The jamb may be part of a fixed outer frame, or provided by a stile of a fixed panel, or the stile of another sliding door or
30 window up to which the first mentioned sliding door or window abuts.

Whilst a simple strike slot for the Hook Bolt can be cut in a metal jamb, this does not allow for any adjustment to accommodate variations arising on
35 assembly and installation of the door or window. Variations may arise in the dimensions of the frame of the door or window or arise from the attitude on sliding tracks or other sliding gear.

Furthermore, some adjustment is required
40 because in most cases, an installer purchases a standard range of extrusions from which the doors and/or window frames are assembled to fit the customer's site, and although most of the assembly can be done in a factory or workshop
45 off-site, last and final adjustments are required on installation. The tolerances allowed on site for the brick-work or other finish to the opening into which the sliding door or window is to be fitted are to a standard cruder than that of the door or
50 window frames and deviations of a significant amount must be accommodated by the installer.

It is already known for lock manufacturers to provide Hook Bolts in which the throw and length of the bolt can be varied by special adjustment
55 means usually associated with the pivot centre of the bolt and within the locking mechanism. Additionally, the face-plate of the Hook Bolt may provide limited adjustment for the vertical location of the Hook Bolt on the stile of the door or
60 window. However, sometimes when the door or window is assembled and finished off-site, these adjustments are not sufficient to accommodate the actual requirement on site or require special tools or skills.

65 Not only are the range of manufacturer's adjustments limited, but in Hook Bolts for security applications and heavier duty, some manufacturers do not provide any adjustment at all.

70 Some manufacturers of Hook Bolts have attempted to solve this problem of site adjustment by providing separate strike plates which are intended to be accurately located over a suitable opening provided in the jamb, and then secured
75 thereto by face fixing with screws or like fasteners. However, as will be appreciated, when fixing a separate striker to a metal jamb, once the holes for the fasteners have been made, further adjustment is precluded without modifying the striker plate,
80 say by providing slots instead of circular holes. However, even slots only provide vertical or other adjustment in a single plane, and shims or other packing may also be required to finely adjust the lateral position of the abutment face of the striker
85 plate. To a large extent such site adjustments on installation are unsatisfactory, and in many instances are unacceptable to give adequate security and rigid retention of the striker plate on the jamb.

90 The successful and proper operation of a Hook Bolt is dependent on the accurate positioning of the striker relative to the Hook Bolt. For the foregoing reasons, the installer of sliding doors or windows finds it desirable to have some means by
95 which such accurate positioning of the striker can be obtained.

It is an object of this invention to provide an improved striker for a Hook Bolt which is adjustable.

100 It is a further object of this invention to provide a striker for a Hook Bolt in which a secure but adjustable fixing may be obtained in a simple expedient manner on site by even unskilled fitters.

It is another object of this invention to provide a
105 striker for a Hook Bolt which can be adjusted without any special tools and which can be used with a wide range of Hook Bolts.

Other objectives of this invention and the advantages to be derived therefrom will become
110 apparent from the description given later herein.

According to this invention, we provide a striker for a Hook Bolt as previously specified, the striker comprising a strike block and a strike support, the strike block having one end defining an abutment
115 for engagement by the hook or claw end of the bolt of the Hook Bolt, the strike support comprising an elongage section having a base wall, opposed side walls and each side wall having in inwardly directed flange extending lengthwise
120 of the section to define a channel with an open side, the strike block being retained within the channel for relative sliding movement lengthwise of the channel by a pair of opposed lateral extensions on the block remote from the said one
125 abutment end and engaging behind said flanges of the wide walls, the engagement of the extensions with the flanges providing a fulcrum for tilting movement of the block relative to the channel, the block mounting two threaded elements accessible

through the open side of the channel between the flanges for adjusting rotation relative to the block with the threaded elements being spaced one on each side of the fulcrum, the arrangement of the 5 striker in use being such that on withdrawal of the threaded elements into the strike block, the block is slidable relative to the strike support to adjust the vertical position of the abutment relative to a Hook Bolt, and on extending the two threaded 10 elements to engage the base wall of the channel the strike block may be clamped in the vertically adjusted position, and on further adjustment of the two threaded elements in opposed respective senses, the block is caused to tilt about the 15 fulcrum to adjust the position of the abutment in a substantially horizontal plane and relative to the base wall of the channel.

By this invented form of striker in which a strike block can be adjusted relative to the strike 20 support, on the slidable adjustment the vertical position of the abutment is set to suit the Hook Bolt, and by further adjustment causing tilting of the abutment end of the striker block, the horizontal position of the abutment can be 25 adjusted. These two adjustments provided by the invented strike avoid any need to adjust the vertical position of the Hook Bolt and the throw of the bolt thereof once the Hook Bolt is installed in the sliding door or window and after the door or 30 window has been set up in the appropriate track or outer frame.

Adjustment by two threaded elements carried by the strike block is simple and can be done on 35 site after the door or window has been mounted so that accurate alignment of the abutment of the strike block can be obtained by simply presenting the bolt of the Hook Bolt towards the strike block to align same in correct register. The adjustment of the strike block can be made without special 40 tools and drilling or piercing on site is avoided. Furthermore, re-adjustment of the striker can be made later if necessary due to wear or settlement of the installation.

Preferably, the strike support is incorporated in 45 the outer frame of the door or window installation, and comprises the jamb or stile meeting with the sliding door or window carrying the Hook Bolt. Thus the jamb or stile may be designed to provide the appropriate channel section.

Alternatively, where the outer frame is of 50 hardwood or comprises a non-compatible section, part of this may be wholly or partially removed, and a short length of strike support planted in or on the frame at the lock position. The length of the 55 strike support would be selected to provide sufficient distance for the range of vertical adjustment that may be required for the Hook Bolt and the strike block.

In either case, the strike support may be 60 secured to the fixed surround or structure of the installation, and if desired after all adjustments of the strike block have been completed this may be rigidly secured to the strike support in the adjusted position.

65 Preferably, the strike block has a substantial

solid body of rectangular shape in front plan view and this body is arranged as a sliding fit in the channel of the strike support. The strike block is arranged for tilting adjusting movement to change 70 the distance that the abutment end of the strike block protrudes from the channel between the two opposed flanges of the strike support.

The lateral extensions of the strike block are preferably provided by the opposed ends of a pin 75 extending through the body, and the fulcrum for such tilting movement of the strike block relative to the strike support is provided by the engagement of the opposed ends of the pin engaging behind the flanges of the side walls of 80 the strike support.

Preferably, the rear face of the strike block arranged to lie adjacent the base wall of the channel is formed with a boss having a curved 85 face extending substantially concentric with the pin and providing a bearing support for the strike block on the base wall for tilting adjustment of the strike block. The support surface provided by the boss is preferably part-cylindrical and extends across the width of the strike block.

90 The two threaded elements may comprise grub screws having recess drive ends with the screws being received in respective threaded bores or drilling in the striker block. The bores or drillings are spaced on either side of the pin so that in the 95 assembled striker, the threaded elements are spaced one above the other with the pin extending horizontally therebetween.

The strike block is arranged so that it may be 100 inserted in the strike support in either attitude with the abutment end being uppermost or lowermost so that the striker according to this invention can be employed with both types of Hook Bolt as aforementioned having upward or downward 105 pivotal displacement of the bolt.

Furthermore, the respective sizes of the block and the open side of the channel may be selected to accommodate a wide range of bolts so that differing rated bolts may be employed with the 110 same striker.

115 Lastly, as will also be appreciated, from the security aspect, once the strike support and the strike block have been installed with the block confined within the channel of the strike support, it is not possible to remove the strike block, and this obviates unauthorised tampering with the Hook Bolt and striker.

Other merits and advantages of this invention will be understood from the following description of an exemplary embodiment of this invention 120 shown in the accompanying drawing wherein:—
FIGURE 1 is an exploded isometric view of a strike block and strike support depicted in the position ready for mounting the block in the support; and

125 *FIGURE 2* is a side view of the strike block depicting schematically the range of tilting adjustment.

With reference to the drawings, the striker comprises a strike block 1 and a strike support 2. 130 The strike block 1 is an aluminium alloy body of

generally rectangular front plan shape having at one end a stepped transverse abutment 3 for engagement by the claw or hook end of a bolt of a Hook Bolt (not shown). The abutment end of the strike block is stepped so as to be shallower in depth than the remainder of the block to provide in use a strike face over which the claw or hook engages in known manner.

The strike support 2 is a length of aluminium alloy extrusion having a section designed to complement the strike block for the purposes to be described. In this exemplary embodiment, the strike support is designed as a jamb for use in a sliding door installation.

The strike support 2 has a base wall 4, opposed side walls 5 and 6, and two inwardly directed flanges 7 and 8 define an open-sided channel. The distance between the opposed free edges of the two flanges 7 and 8 is such that there is a small clearance for the front portion of the strike block 1 to protrude through the opening which extends the length of the support.

The opposed side walls of the strike support include forwardly extending portions extending the channel shape and providing a rebate into which the side edge of a door or window may be received or abut against. On the inner face of each forward extension of the side walls there are respective undercut ribs 9, 10 and undercut lips 11, 12. Each adjacent rib and lip provides a groove or rebate extending lengthwise of the jamb and in which a suitable seal or draught excluder section may be located.

The strike block 1 has two lateral extensions which are provided by the opposed ends of a steel pin 13 inserted in a bore through the block remote from the abutment end. The ends of the pin 13 are arranged to engage behind the flanges 7 and 8 so that after the strike block has been inserted in the channel of the strike support, it is retained therein for relative sliding movement lengthwise of the channel. The front or forward portion of the strike block protrudes through the open side of the channel.

On either side of the pin 13 the strike block is pierced by tapped drillings or bores 14, 15 arranged to receive respective grub screws 16, 17. The drillings extend transversely to the axis of the pin and are normal thereto. In the assembled striker, the drillings are spaced vertically above and below the horizontal axis of the pin 13. In the assembled condition of the striker, the ends of the pin 13 provide a fulcrum for tilting movement of the strike block in the channel, and the drive ends of the grub screws are accessible through the open side of the channel between the flanges 7 and 8.

The rearward portion of the strike block arranged to lie adjacent to the base wall 4 is provided with a boss 19 providing a part cylindrical support face 20 that is substantially concentric with the axis of the pin 13. The face 20 is arranged to engage the face of the base wall with slight friction to permit the sliding movement of the strike block relative to the channel.

The strike block 1 is provided with a through bore 21 intermediate the abutment end and the drilling 14, and a wood screw 22 or other stud or fastener may be fitted for securing the assembly together and to a fixed outer frame.

In use of the striker according to this embodiment, the strike support 1 is a jamb secured by means (not shown) to the fixed structure. A sliding door or window is movable to abut up to or in the jamb engaging suitable seals mounted on the forward extensions of the side walls of the strike support. The door or window carries a Hook Bolt and in the arrangement of the striker as depicted, the bolt with the claw or hook end would be disposed for downward pivotal locking displacement under the control of the locking mechanism. The claw or hook would engage over the top of the abutment end of the strike block.

By the initial assembly of the strike block to the strike support, the grub screws are retracted into their respective drillings or bores and the strike block is slidden into the channel of the strike support with the ends of the pin 13 engaging behind the flanges 7 and 8. The strike block is moved into the correct vertical position for co-operation with the bolt of the Hook Bolt. On completing such alignment, the grub screws are extended so that they are brought into engagement with the base wall 4 of the strike support. On tightening the grub screws, the strike block is clamped in the vertical position.

At this stage of adjustment the abutment 3 is brought into the correct vertical alignment, but further adjustment may be required to change the position of the abutment in the horizontal sense to move it inwards or outwards relative to the base wall of the channel. This adjustment is required to accommodate the throw and length of the bolt of the Hook Bolt mounted in the door or window, or may be required to take up other tolerances in the assembly and the door or window.

To make such further adjustment, the grub screws 16 and 17 are turned in respective opposed senses so that their relative extents projecting from the rear of the strike block are shortened and lengthened to cause the strike block to pivot on the fulcrum provided by the ends of the pins whilst the strike block is supported by the face 20 engaging the base wall of the channel during the tilting adjustment.

As schematically shown in Figure 2 of the drawings, the strike block may be so tilted to adjust the position of the abutment face towards and away from the base wall of the channel through a range of distances which are normally sufficient to allow for the various tolerances arising.

As will now be appreciated, the adjustment of the striker block is carried out in a simple and effective manner and can be completed by an unskilled fitter without any special tools or having to drill or pierce any parts. If desired, after such final adjustment has been completed, it is possible to set the striker block in the desired position, and

for this purpose the wood screw 22 or a similar self-tapping or drive fixing fastener may be employed. The wood screw or the like is inserted into the through bore 21 and driven into and through the base wall of the channel to secure the assembly together and to any outer frame or structure.

It will be clearly understood, that the striker according to this invention and as just described can be used for a Hook Bolt mounted for an upward throw of the bolt. All that is required is for the strike block to be inserted in the strike support.

Although in this embodiment the strike support is constituted by a section design for a door or window jamb or stile, this is not essential. The strike support may comprise a short length of channel or open-sided box section arranged to slidably receive a strike block. The length of strike support would be secured in a suitable recess provided in a jamb or stile, and all that may be required is to cut away a matching length of jamb or stile and to provide some make-up or filler piece if the outward appearance of the stile or jamb had to be maintained.

By such an arrangement it becomes possible to refurbish existing installations or to rectify damage to a striker mounted on a jamb or stile. Furthermore, such striker assembly has merits in fitting to hollow section of plastics which are becoming increasingly used for window and door systems.

It is envisaged that the shape and configuration of the strike support may be changed to suit the profile of the door or window system. The proportions of the strike support and strike block can be changed without detracting from the principle of the invention. The strike block may be formed by a metal pressing or a moulding of high impact plastics instead of the aluminium alloy body described in the exemplary embodiment.

CLAIMS

1. A striker for a Hook Bolt as specified, the striker comprising a strike block and a strike support, the strike block having one end defining an abutment for engagement by the hook or claw end of the bolt of the Hook Bolt, the strike support comprising an elongate section having a base wall, opposed side walls and each side wall having an inwardly directed flange extending lengthwise of the section to define a channel with an open side, the strike block being retained within the channel for relative sliding movement lengthwise of the channel by a pair of opposed lateral extensions on the block remote from the said one abutment end and engaging behind said flanges of the side walls, the engagement of the extensions with the flanges providing a fulcrum for tilting movement of the block relative to the channel, the

60 block mounting two threaded elements accessible through the open side of the channel between the flanges for adjusting rotation relative to the block with the threaded elements being spaced one on each side of the fulcrum, the arrangement of the 65 striker in use being such that on withdrawal of the threaded elements into the strike block, the block is slidable relative to the strike support to adjust the vertical position of the abutment relative to a Hook Bolt, and on extending the two threaded 70 elements to engage the base wall of the channel the strike block may be clamped in the vertically adjusted position, and on further adjustment of the two threaded elements in opposed respective 75 senses, the block is caused to tilt about the fulcrum to adjust the position of the abutment in a substantially horizontal plane and relative to the base wall of the channel.

2. A striker according to claim 1 wherein the strike support comprises an extruded section.

80 3. A striker according to claim 2 wherein the strike support is a fixed jamb or stile.

4. A striker according to any one of the preceding claims wherein the strike block is a substantial solid body of rectangular shape in front 85 plan view and arranged as a sliding fit in the channel of the strike support with the tilting adjusting movement varying the distance that the abutment end of the strike block protrudes from the channel between the two opposed flanges of the strike support.

90 5. A striker according to any one of the preceding claims wherein the lateral extensions of the strike block are provided with the opposed ends of a pin extending through the body, and the 95 fulcrum for such tilting movement of the strike block relative to the strike support is provided by the engagement of the opposed ends of the pin engaging behind the flanges of the side walls of the strike support.

100 6. A striker according to claim 5 wherein the rear face of the strike block arranged to lie adjacent the base wall of the channel is formed with a boss having a curved face extending 105 substantially concentric with the pin and providing a bearing support for the strike block on the base wall for tilting adjustment of the strike block.

7. A striker according to claim 6 wherein the support surface provided by the boss is part-cylindrical and extends across the width of the 110 strike block.

8. A striker according to any one of the preceding claims wherein the two threaded elements comprise grub screws having recess drive ends with the screws being received in 115 respective threaded bores or drillings in the striker block.

9. A striker according to claim 8 wherein the bores or drillings are spaced on either side of lateral extensions so that in the assembled striker,

the threaded elements are spaced one above the other with the lateral extensions extending horizontally therebetween.

10. A striker for a Hook Bolt substantially as
5 hereinbefore described with reference to the accompanying drawing.

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